

WHAT IS CLAIMED IS:

1. A method for providing information in a mobile communication system comprising a router  
5 connected to a predetermined network, and a plurality of communication apparatuses which can communicate with mobile terminals and are connected to the router, in order to provide the information on the predetermined network to the mobile terminals,  
10 wherein:

the router obtains the information from the predetermined network, and transfers this obtained information from the predetermined network to all of the communication apparatuses connected to  
15 the router; and

each of the communication apparatuses receives the information from the predetermined network from the router, and transmits this received information from the predetermined network to a  
20 service area of its own provided by the communication apparatus.

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2. The method for providing information as claimed in claim 1, wherein:

upon receiving a location registration request from the mobile terminal located in the  
30 service area of its own, each of the communication apparatuses registers information relating to the mobile terminal originating the request into a located terminal table of its own held and used for managing the mobile terminals located in the service  
35 area of its own provided by the communication apparatus;

each of the communication apparatuses

determines whether information relating to a destination mobile terminal of the received information from the predetermined network is included in the located terminal table of its own;

- 5               when the communication apparatus determines that the information relating to the destination mobile terminal is included in the located terminal table of its own, each of the communication apparatuses transmits the received
- 10 information on the predetermined network to the destination mobile terminal; and
- when the communication apparatus determines that the information relating to the destination mobile terminal is not included in the
- 15 located terminal table of its own, each of the communication apparatuses does not transmit the received information on the predetermined network to the destination mobile terminal.

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3. The method for providing information as claimed in claim 2, wherein:

- 25               each of the communication apparatuses sets up a delete time for the information relating to the mobile terminal registered in the located terminal table of its own;
- each of the communication apparatuses
- 30 updates the delete time each time the location registration request is received from the same mobile terminal after the information relating to that mobile terminal is registered in the located terminal table of its own; and
- 35               each of the communication apparatuses deletes the information relating to the mobile terminal corresponding to the delete time from the

located terminal table of its own when current time reaches the delete time.

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4. The method for providing information as claimed in claim 2, wherein:

when each of the communication apparatuses  
10 receives a request for deleting the information relating to the mobile terminal that has moved out from the service area of its own provided by the communication apparatus, each of the communication apparatuses deletes the information relating to the  
15 mobile terminal from the located terminal table of its own in response to the request.

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5. A mobile communication system comprising a router connected to a predetermined network, and a plurality of communication apparatuses which can communicate with mobile  
25 terminals and are connected to the router, the router comprising:

an information obtaining part for obtaining information on the predetermined network; and  
30 an information transfer part for transferring the information on the predetermined network obtained by the information obtaining part to all of the communication apparatuses, and each of the communication apparatuses comprising:  
35 an information receiving part for receiving the information from the predetermined network from the router; and

an information communicating part for transmitting the information on the predetermined network received from the information receiving part to a service area of its own provided by the  
5 communication apparatus.

10 6. The mobile communication system as claimed in claim 5, each of the communication apparatuses further comprising:

an information registration part for registering the information relating to the mobile  
15 terminal originating the request into a located terminal table held and used for managing the mobile terminals located in the service area of its own provided by the communication apparatus, when the communication apparatus receives a location  
20 registration request from the mobile terminal located in the service area of its own; and

an information presence determining part for determining whether the information relating to a destination mobile terminal of the information on  
25 the predetermined network received by the information receiving part is included in the located terminal table, wherein:

when the information presence determining part determines that the information relating to the  
30 destination mobile terminal is included in the located terminal table, the information communicating part transmits the information from the predetermined network to the destination mobile terminal; and

35 when the information presence determining part determines that the information relating to the destination mobile terminal is not included in the

located terminal table, the information communicating part does not transmit the information from the predetermined network to the destination mobile terminal.

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7. The mobile communication system as claimed in claim 6, each of the communication apparatuses further comprising:

a delete time setup part for setting up a delete time for the information relating to the mobile terminal registered in the located terminal table by the information registration part;

a delete time update part for updating the delete time each time the location registration is requested by the mobile terminal after the information relating to the mobile terminal is registered in the located terminal table by the information registration part; and

a first information delete part for deleting the information relating to the mobile terminal corresponding to the delete time from the located terminal table when current time reaches the delete time.

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8. The mobile communication system as claimed in claim 6, each of the communication apparatuses further comprising a second information delete part, wherein:

when each of the communication apparatuses receives a request for deleting the information relating to the mobile terminal that has moved out

from the service area of its own provided by the communication apparatus, the second information delete part deletes the information relating to the mobile terminal from the located terminal table in response to the request.

10                   9. A communication apparatus for  
transmitting information on a predetermined network  
to a plurality of mobile terminals in a mobile  
communication system, comprising:  
                  an information registration part for  
15   registering the information relating to a requesting  
mobile terminal into a located terminal table of its  
own held and used for managing the mobile terminals  
located in a service area of its own provided by the  
communication apparatus when the communication  
20   apparatus receives a location registration request  
from the mobile terminal located in the service area  
of its own;  
                  an information presence determining part  
for determining whether the information relating to  
25   a destination mobile terminal of the information  
from the predetermined network received by the  
information receiving part is included in the  
located terminal table of its own; and  
                  an information communicating part for  
30   transmitting the information from the predetermined  
network to the destination mobile terminal, when the  
information presence determining part determines  
that the information relating to the destination  
mobile terminal is included in the located terminal  
35   table of its own, and for not transmitting the  
information from the predetermined network to the  
destination mobile terminal, when the information

presence determining part determines that the information relating to the destination mobile terminal is not included in the located terminal table of its own.

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10 10. The communication apparatus as claimed in claim 9, further comprising:

15 a delete time setup part for setting up a delete time for the information relating to the mobile terminal registered in the located terminal table of its own by the information registration part;

20 a delete time update part for updating the delete time each time the location registration is requested by the mobile terminal after the information relating to the mobile terminal is registered in the located terminal table of its own by the information registration part; and

25 a first information delete part for deleting the information relating to the mobile terminal corresponding to the delete time from the located terminal table of its own when current time reaches the delete time.

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11. The communication apparatus as claimed in claim 10, further comprising a second information delete part, wherein:

35 when each of the communication apparatuses receives a request for deleting the information relating to the mobile terminal that has moved out from the service area of its own provided by the

communication apparatus, the second information delete part deletes the information relating to the mobile terminal from the located terminal table of its own in response to the request.

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**RESEARCH**